

KW Transgenic; swine; porcine; alpha (1,3) galactosyltransferase;
 KW antisense; ribozyme; Gal-alpha-1,3-Gal-beta-1,4-GlcNAc; epitope;
 KW terminal; xenogenic; transplant; rejection; gene therapy; pig.
 XX
 OS Sus scrofa.
 XX
 FN W09528412-A1.
 XX
 PD 26-OCT-1995.
 XX
 PF 31-MAR-1995; 95WO-05039440.
 XX
 PR 13-APR-1994; 94US-0228933.
 XX
 PA (BIOT-) BIOTRANSPLANT INC.
 PA (GHEO) GEN HOSPITAL CORP.
 PA (CHIL-) INST CHILD HEALTH.
 XX
 PI Haelscher MW, Gustafsson KI, Sachs DH;
 DR WPI: 1995-373759/48.
 DR N-PSDB: AA102892.
 XX
 PT Novel transgenic alpha (1,3) galactosyltransferase negative swine
 PI - used to produce rejection resistant cells for xenogenic
 PT transplantation
 XX
 PS Claim 11; Pages 35-37; 56pp; English.
 XX
 CC Transgenic swine in which the normal expression of the alpha (1,3)
 CC galactosyltransferase (AGT) AAR85082 is prevented, are prep. by
 CC inhibiting the expression of the AGT gene AA102892 using antisense
 CC oligonucleotides or ribozyme inactivators in a pluripotent porcine
 CC embryonic stem cell. It is then inserted into a porcine oocyte
 CC (from which the pronuclear material has been removed), which is
 CC itself grown to produce the transgenic swine. Swine which do not
 CC express AGT will not produce carbohydrate moieties contg. the
 CC distinctive terminal Gal-alpha-1,3-Gal-beta-1,4-GlcNAc epitope,
 CC which is a significant factor in xenogenic (esp. human) transplant
 CC rejection of swine grafts. Therefore the swine cells produced in
 CC the AGT negative transgenic swine are xenogenic transplant
 CC rejection resistant, and can therefore be used by a transplant
 CC recipient, or to provide gene therapy.
 CC
 XX
 SQ Sequence 371 AA:
 Query Match 84.9%; Score 1701; DB 16; Length 371;
 Best local Similarity 82.6%; Pred. No. 1,4e-162;
 Matches 308; Conservative 45; Mismatches 24; Indels 6; Gaps 3;
 QY 1 MNVKKVILSMVSTVIVFWEYTHSPGSLFWINPSRNPVSGSSIQKGMWPPWFN 60
 DB 1 mvkvgrvvlsmvlstvmvntwelynspsqslfwlygskpov--qssaqrgwtfpswfn 58
 QY 61 NG---YQEHDEVDDEKFKQKED KSKIKLSQWENPKRPREVNTMTQKAVVWEGTYNR 116
 DB 59 ngthsyheedaianekeqfkdndnrcplvdwtnpekrpevlltrkayvweqlynr 118
 QY 117 AVLDQYAAKQKITVGLTVFAVGRYIEHTLEFFLTSANKHFWGCHVIFYVWVDVDSKMP 176
 DB 119 avldnyaaqkltvltvavgrvtyehyleelltsantfyimvqkhtvilylmvddstmp 178
 QY 177 IELGLPKSKVEVKKERKQWQVSNVKKMTIGENHIVAHIQREVDLFQMDYQVQDEFG 236
 DB 179 ielglprstskvveikskokwqslsmmrnktlqghliahqhevdlfcmvqdvqfqnifg 238
 QY 237 VETLQESVAGUQAMWTKADPDEPTTERKESAAATPHGCGDYTYAAATPGCTPTOVNLT 296
 DB 239 vetlqsvagqagawwkaipdeltyerikesaaylptqddtyynaaltqgplptq 298
 QY 297 QCEPKKILKDKKNDIEAOWHDESHLNKPYLKNKPTKILSPYCWQYHGLPADIKLVKWS 356
 DB 299 qcepkkilqdkndieawhdeahwshlnkpyllnkptkilspeywdyhtqmvdtrtckia 358

DB 299 qcepkkilqdkndieawhdeahwshlnkpyllnkptkilspeywdyhtqmvdtrtckia 358
 QY 357 WQTKENYVVRNNV 369
 DB 359 wtkkynvlnvnni 371
 RESULT 4
 AAR76777
 ID AAR76777 standard; Protein; 371 AA.
 AC AAR76777;
 XX
 DI 11-DEC-1995 (first entry)
 XX
 DE Pig alpha-1,3-galactosyltransferase.
 XX
 KW Alpha-1,3-galactosyltransferase; alpha-1,3-GalT; transgenic animal;
 KW pig; hyperacute rejection; xerograft transplantation; donor organ;
 KW allograft rejection; Gal epitope; gene disruption;
 KW homologous recombination; knock-out.
 XX
 OS Sus scrofa.
 XX
 FN W09520661-A1.
 XX
 PD 03-AUG-1995.
 XX
 PF 27-JAN-1995; 95WO-1B00088.
 XX
 PR 26-JAN-1995; 95US-0188607.
 PR 27-JAN-1994; 94US-0188607.
 XX
 PA (BRES-) BRESATEC LTD.
 PA (SVIN-) ST VINCENT'S HOSPITAL MELBOURNE LTD.
 PI Crawford RJ, Daplice AJF, Pearce MJ, Rathjen PD;
 PI Robbins AJ;
 DR WPI: 1995-275446/36.
 DR N-PSDB: AAQ93077.
 XX
 PT New alpha-1,3-galactosyltransferase and leukaemia inhibitor factor
 PT - corresp. DNA and nucleic acid constructs for inactivating the
 PT transferase gene; for eliminating hyperacute region in human
 PT transplants
 XX
 PS Claim 3; Fig.5; 184pp; English.
 XX
 CC cDNA encoding porcine alpha-1,3-GalT was generated from liver RNA
 CC using primers based on conserved regions of the mouse and cattle alpha-
 CC 1,3-GalT genes. Potential sites to interrupt the alpha-1,3-GalT gene
 CC (via homologous recombination) were identified in exons 4, 7, 8 and 9.
 CC Such inactivation allows the breeding of "knock-out" animals, e.g.
 CC pigs suitable as donors of organs to overcome hyperacute rejection
 CC problems in human xenotransplantation.
 CC
 XX
 SQ Sequence 371 AA:
 Query Match 84.6%; Score 1694; DB 16; Length 371;
 Best local Similarity 82.0%; Pred. No. 7.1e-162;
 Matches 306; Conservative 37; Mismatches 24; Indels 6; Gaps 4;
 QY 1 MNVKKVILSMVSTVIVFWEYTHSPGSLFWINPSRNPVSGSSIQKGMWPPWFN 60
 DB 1 mvkvgrvvlsmvlstvmvntwelynspsqslfwlygskpov--qssaqrgwtfpswfn 58
 QY 61 NG---YQEHDEVDDEKFKQKED KSKIKLSQWENPKRPREVNTMTQKAVVWEGTYNR 116
 DB 59 ngthsyheedaianekeqfkdndnrcplvdwtnpekrpevlltrkayvweqlynr 118
 QY 117 AVLDQYAAKQKITVGLTVFAVGRYIEHTLEFFLTSANKHFWGCHVIFYVWVDVDSKMP 176

[illegible]

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0Y 238 ELLEESVAVLOLAWMYKKAUPDEETYNRRKRESAAVLPFGSGDEYYNAALFEGSTPTQVLAINTQ 247
Db 263 ellll:llllllllllllllllllllllllllllllllllllllllllllllllllllllllllll 322
0Y 298 ECFKQILEKDKKNDTEFAOWHDESHLNKPYLLNKPRLSLSEFYQWQYHIGLPAULIKLVKMSW 457
Db 323 ecfkqlldkdkhdiaeqqhdeshlnukylrlrkprklispeywdyqlqlpsdlskswkva 482
0Y 358 QTKRYNNVNNVV 369
Db 383 qtkrynnlvnnvv 394

RESULT 11
AAR45935
AAAR45935 standard: Protein: 394 AA.
AC AAR45935:
DT 26-JUL-1994 (first entry)
DE
XX A glycosyltransferase.
XX
XX Glycosyltransferase, lincosyltransferase; GDP-FucT in vitro; cell:
XX surface; oligosaccharide.
XX
XX Homo sapiens.
XX
XX WO9402616-A.
XX
XX 03-FEB-1994.
XX
XX 20-JUL-1993; 93WO-US06703.
XX
XX 20-JUL-1992; 92US-0914281.
XX
XX (DMM1 ) UNIV MICHIGAN.
XX
XX Lowe DB:
XX
XX WPI: 1994-048874/06.
XX
XX N-PSDB: AAO56907.
XX
XX DNA fragment encoding a glycosyltransferase - can be used for in
XX vitro reactions to modify cell surface oligosaccharide(s) e.g.
XX blood gp. determinants, to protect against transplant rejection
XX
XX Disclosure: Fig 2; 249pp; English.
XX
XX The sequence is that of a human glycosyl transferase. The enzyme
XX may be non glycosylated. This prevents premature loss of enzyme
XX activity. It can also be used in vitro reactions to modify cell
XX surface oligosaccharide mols. e.g. blood group determinants.
XX See also AAR45933-9.
XX
XX Sequence 394 AA:

Query Match 73.4%. Score 1471; DB 15; Length 394;
Best Local Similarity 71.5%; Pred. No. 2,10-139;
Matches 266; Conservativity 47; Mismatches 44; Indels 16; Gaps

0Y 1 MNVGSKVLISMLVSTIVVEWEYIHSPEGSLFWLNPSSRPVSQSSLOKGMFEPMPN 60
Db 36 mnvgskvlllmllivstvvvviwgy-----m lpev genwqkwtlpswtk 82

0Y 61 NG--YOEDEVDDEEKEDKESKLLSDMFNPFRPEVVTMTDMKAPVVEGTYNKA 117
Db 83 ngthsgedvnevgtrrekarngrlcepqqlwdtlopnknprdlvtlvkqapltweclydia 142

0Y 118 VLDYYAAKQTTVGITVAVNGYIEHYIFPLITSANKRPMVGHKVFYVMVGVNSKMLL 177
Db 143 vlekyatqklvtvgiltvavngkyiehyledilesadmyfmvghrvltfymvddrstrpiv 202

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[illegible][illegible]

